

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. – 2. (canceled)

3. (currently amended) ~~The structure according to claim 1,~~ In a microelectronic device, a structure on a substrate comprising:

a diffusion barrier layer wherein the diffusion barrier layer comprises comprising an organic composition and disposed above and on the substrate, the diffusion barrier layer having a first thickness and a first dielectric constant, wherein the first thickness comprises a range from about one atomic monolayer to about 1000 angstroms;

an etch stop layer comprising wherein the etch stop layer comprises an inorganic composition above and on the diffusion barrier layer, the etch stop layer having a second thickness, and a second dielectric constant; and

an interlayer dielectric (ILD) layer disposed above and on the etch stop layer, wherein the structure has an effective dielectric constant in a range less than about 3.

4. (currently amended) ~~The structure according to claim 1,~~ In a microelectronic device, a structure on a substrate comprising:

a diffusion barrier layer disposed above and on the substrate, the diffusion barrier layer having a first thickness and a first dielectric constant, wherein the first thickness comprises a range from about one atomic monolayer to about 1000 angstroms, and wherein the diffusion barrier layer is selected from arylene, parylene, and arylene ether polymers, and fluorinated polyimides;

an etch stop layer above and on the diffusion barrier layer, the etch stop layer having a second thickness, and a second dielectric constant; and

an interlayer dielectric (ILD) layer disposed above and on the etch stop layer, wherein the structure has an effective dielectric constant in a range less than about 3.

5. – 6. (canceled)

7. (currently amended) The structure according to claim 29 [[1]], further comprising:

an electrically conductive trace disposed in the substrate; and

a contact disposed in a recess that extends through the ILD layer, the etch stop layer, and the diffusion barrier layer, and wherein the contact makes an electrical connection to the trace.

8. (currently amended) In a microelectronic device, a structure on a substrate ~~The structure according to claim 1, further~~ comprising:

a diffusion barrier layer disposed above and on the substrate, the diffusion barrier layer having a first thickness and a first dielectric constant, wherein the first thickness comprises a range from about one atomic monolayer to about 1000 angstroms;

an etch stop layer above and on the diffusion barrier layer, the etch stop layer having a second thickness, and a second dielectric constant;

an interlayer dielectric (ILD) layer disposed above and on the etch stop layer, wherein the structure has an effective dielectric constant in a range less than about 3;

an electrically conductive trace disposed in the substrate; and

a contact disposed in a recess that extends through the ILD layer, the etch stop layer, and the diffusion barrier layer, and wherein the contact makes an electrical connection to the trace, wherein the contact is a single-damascene contact article.

9. – 27. (canceled)

28. (currently amended) In a microelectronic device, a structure on a substrate ~~The structure according to claim 1, further~~ comprising:

a diffusion barrier layer disposed above and on the substrate, the diffusion barrier layer having a first thickness and a first dielectric constant, wherein the first thickness comprises a range from about one atomic monolayer to about 1000 angstroms;

an etch stop layer above and on the diffusion barrier layer, the etch stop layer having a second thickness, and a second dielectric constant;

an interlayer dielectric (ILD) layer disposed above and on the etch stop layer, wherein the structure has an effective dielectric constant in a range less than about 3

an electrically conductive trace disposed in the substrate;

a first recess in the ILD layer with a first width and extending from a bottom surface of the ILD layer up to a position partway through the ILD layer;

a second recess in the ILD layer with a second width wider than the first width and extending from the top of the first recess to the top of the ILD layer; and

a contact disposed in the first and second recesses, wherein the contact makes an electrical connection to the trace.

29. (currently amended) ~~The structure according to claim 1, wherein:~~ In a microelectronic device, a structure on a substrate comprising:
a diffusion barrier layer disposed above and on the substrate, the diffusion barrier layer having a first thickness and a first dielectric constant, wherein the first thickness comprises a range from about one atomic monolayer to about 1000 angstroms;
an etch stop layer above and on the diffusion barrier layer, the etch stop layer having a second thickness, and a second dielectric constant;
an interlayer dielectric (ILD) layer disposed above and on the etch stop layer, the ILD layer having ~~has~~ a third thickness; and the third thickness is greater than the second thickness; and
wherein the structure has an effective dielectric constant in a range less than about 3.

30. (currently amended) The structure according to claim 29 ~~[[1]]~~, wherein:

~~the ILD layer has a third thickness; and~~

the third thickness is at least about 5 times as thick as the second thickness.

31. (currently amended) The structure according to claim 29 ~~[[1]]~~, wherein the second thickness is greater than the first thickness.

32. (currently amended) The structure according to claim 31 ~~[[1]]~~, wherein the second thickness is at least about 10 times as thick as the first thickness.

33. (currently amended) The structure according to claim 30 ~~[[1]]~~, wherein:

~~the ILD layer has a third thickness;~~

~~the third thickness is at least about 5 times as thick as the second thickness; and~~
the second thickness is at least about 10 times as thick as the first thickness.

34. (currently amended) The structure according to claim 29 [[1]], wherein:
- the diffusion barrier layer comprises silicon nitride;
 - the etch stop layer comprises an organic polymer;
 - the ILD layer comprises a carbon doped oxide ~~and has a third thickness;~~
 - the third thickness is at least about 5 times as thick as the second thickness; and
 - the second thickness is at least about 10 times as thick as the first thickness.

35. – 38. (canceled)